

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF THE CLAIMS:

Claims 1-7 (Cancelled).

8. (Currently Amended) A method of encoding data in an optical signal including a center wavelength, the method comprising:

directing the optical signal through a filter mechanism having a passband function including a center wavelength; and

~~modulating changing the length of~~ the center wavelength of the optical signal to establish a difference between the lengths of the center wavelengths of the filter mechanism and the optical signal, wherein the difference between the lengths of the center wavelengths of the filter mechanism and the optical signal represents to represent data;

wherein:

the represented data are analog data; and the ~~modulating changing~~ step includes the steps of

- i) providing a look-up table having wavelength differences associated with data values,
- ii) obtaining from the look-up table a specified wavelength difference for a given data value, and
- iii) encoding the given data value in the optical signal by changing the length of the center wavelength of the optical signal to establish establishing the obtained the specified wavelength difference between the center wavelengths of the filter mechanism and the optical signal.

Claims 9-20 (Cancelled).

21. (Currently Amended) A method of using a single optical signal in an optical network to carry both network data and control data, said optical signal including a center wavelength, the method comprising:

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using a wavelength modulation scheme to add the control data to the optical signal, and using another modulation scheme to add the network data to the optical signal; and

directing the optical signal through a filter mechanism having a passband function including a center wavelength;

wherein the step of using the wavelength modulation scheme includes the step of modulating changing the length of the center wavelength of the optical signal to establish a wavelength length

difference between the lengths of the center wavelengths of the filter mechanism and the optical signal, wherein the difference between the lengths of the center wavelength of the filter mechanism and the optical signal represents to represent data; and

wherein the control data are analog data, and the modulating changing step includes the steps of

- i) providing a look-up table having wavelength differences associated with data values,
- ii) obtaining from the look-up table a specific wavelength difference for a given data value, and
- iii) encoding the given data value in the optical signal by establishing changing the length of the center wavelength of the optical signal to establish said specific wavelength difference between the center wavelength of the filter mechanism and the center wavelength of the optical signal.

22. (Previously Presented) A method according to Claim 21, wherein the optical signal has a multitude of defined, digital states, and comprising the further steps of providing a feedback circuit, using the feedback circuit to compare a measured state of the optical signal with said defined digital states, and adjusting the optical signal to match one of the defined digital states.